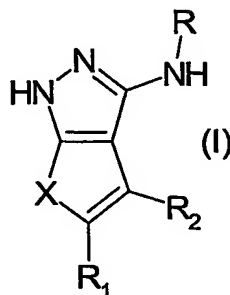


CLAIMS

1. A bicyclo-pyrazole compound of formula (I):



wherein

5 X is NR', O, S, SO or SO₂;

each of R and R₁, being the same or different, is independently a hydrogen atom or an optionally substituted group selected from R', -COR', -COOR', -CONHR', -CONR'R'', -SO₂R', -SO₂NHR' or -SO₂NR'R'', wherein each of R' and R'', being the same or different, is independently selected from hydrogen or an optionally further substituted straight or
10 branched C₁-C₆ alkyl, heterocyclyl, aryl or aryl-C₁-C₆ alkyl group;

R₂ is an optionally substituted group selected from R', -CH₂OR' and OR', wherein R' is as above defined; and the pharmaceutically acceptable salts thereof.

2. A compound, according to claim 1, wherein X is S or O; R is -CONHR'; R₁ is -COR', -CONHR', -CONR'R'', -SO₂NHR' or -SO₂NR'R'', wherein each of R' and R'', being the
15 same or different, is selected from hydrogen or an optionally substituted straight or branched C₁-C₆ alkyl, aryl or aryl-C₁-C₆ alkyl group; R₂ is hydrogen; or a the pharmaceutically acceptable salt thereof.

3. A compound, according to claim 1, wherein X is S; R is -CONHR'; R₁ is -CONHR' or -CONR'R'', wherein each of R' and R'', being the same or different, is selected from
20 hydrogen or an optionally substituted straight or branched C₁-C₆ alkyl, aryl or aryl-C₁-C₆ alkyl group; R₂ is hydrogen; or a pharmaceutically acceptable salt thereof.

4. A compound of formula (I) or a pharmaceutically acceptable salt, according to claim 1, as defined in example 6.

5. A compound of formula (I) or a pharmaceutically acceptable salt, according to claim 1,
25 which is tert-butyl 3-amino-1H-thieno[2,3-c]pyrazole-5-carboxylate.

6. A compound of formula (I) or a pharmaceutically acceptable salt thereof, as defined in claim 1, for use as a medicament.

7. The use of a compound of formula (I) or a pharmaceutically acceptable salt thereof, as defined in claim 1, in the manufacture of a medicament for treating a patient suffering from a disease caused by and/or associated with an altered (disregulated) protein kinase activity.

5 8. A method for treating a mammal, including humans, suffering from a disease caused by and/or associated with an altered (disregulated) protein kinase activity, which comprises administering to said mammal in need thereof a therapeutically effective amount of a bicyclo-pyrazole compound of formula (I), or a pharmaceutically acceptable salt thereof, as defined in claim 1.

10 9. The method of claim 8, wherein the disease caused by and/or associated with an altered protein kinase activity is selected from the group consisting of cancer, cell proliferative disorders, Alzheimer's disease, viral infections, autoimmune diseases and neurodegenerative disorders.

15 10. The method of claim 9, wherein the cancer is selected from the group consisting of carcinoma, squamous cell carcinoma, hematopoietic tumors of myeloid or lymphoid lineage, tumors of mesenchymal origin, tumors of the central and peripheral nervous system, melanoma, seminoma, teratocarcinoma, osteosarcoma, xeroderma pigmentosum, keratoxanthomas, thyroid follicular cancer and Kaposi's sarcoma.

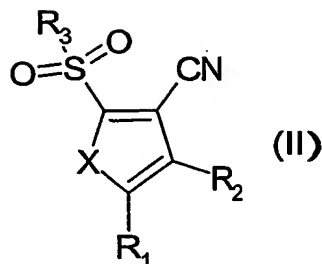
20 11. The method of claim 9, wherein the cell proliferative disorder is selected from the group consisting of benign prostate hyperplasia, familial adenomatosis polyposis, neurofibromatosis, psoriasis, vascular smooth cell proliferation associated with atherosclerosis, pulmonary fibrosis, arthritis glomerulonephritis and post-surgical stenosis and restenosis.

12. The method of claim 8, which provides tumor angiogenesis and metastasis inhibition.

25 13. Use of a compound of formula (I) or of a pharmaceutically acceptable salt thereof, as defined in claim 1, in the manufacture of a medicament for treating a disease caused by and/or associated with an altered protein kinase activity, in a patient undergoing a simultaneous, separate or sequential anticancer treatment.

14. A process for preparing a compound of formula (I) and the pharmaceutically acceptable salts thereof, which process comprises:

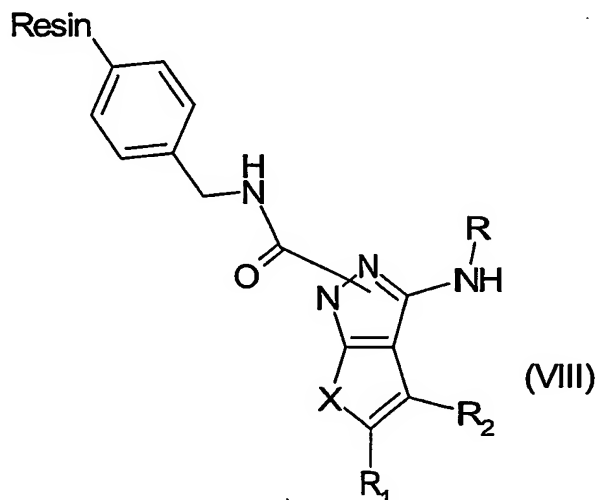
30 a) reacting a compound of formula (II)



wherein R_1 , R_2 and X are as defined in claim 1 and R_3 is a lower alkyl group, with hydrazine or a hydrazine salt, so as to obtain a compound of formula (I) wherein R is hydrogen and R_1 , R_2 and X are as defined above; and, if desired,

- 5 b) converting the thus obtained compound of formula (I) into another compound of formula (I) wherein R is other than a hydrogen atom; and/or, if desired, converting the compound of formula (I) into a pharmaceutically acceptable salt thereof and/or the salt of a compound of formula (I) into a free compound thereof.

15. A combinatorial chemical library comprising a plurality of members of formula (VIII)



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wherein

X is NR' , O , S , SO or SO_2 ;

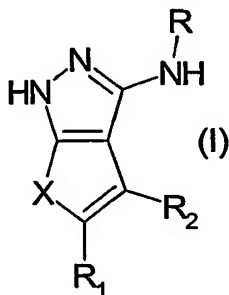
each of R and R_1 , being the same or different, is independently a hydrogen atom or an optionally substituted group selected from R' , $-COR'$, $-COOR'$, $-CONHR'$, $-CONR'R''$,

- 15 $-SO_2R'$, $-SO_2NHR'$ or $-SO_2NR'R''$; wherein each of R' and R'' , being the same or different, is independently selected from hydrogen or an optionally further substituted straight or branched C_1 - C_6 alkyl, heterocyclyl, aryl or aryl- C_1 - C_6 alkyl group;

R_2 is an optionally substituted group selected from R' , $-CH_2OR'$ and OR' , wherein R' is as above defined; and the pharmaceutically acceptable salts thereof.

16. The library of claim 15 wherein the resin is a polystyrenic resin such as a methylisocyanate polystyrenic resin.

- 5 17. A chemical library of compounds comprising two or more derivatives of formula (I)



wherein

X is NR' , O , S , SO or SO_2 ;

- each of R and R_1 , being the same or different, is independently a hydrogen atom or an optionally substituted group selected from R' , $-COR'$, $-COOR'$, $-CONHR'$, $-CONR'R''$, $-SO_2R'$, $-SO_2NHR'$ or $-SO_2NR'R''$; wherein each of R' and R'' , being the same or different, is independently selected from hydrogen or an optionally further substituted straight or branched C_1-C_6 alkyl, heterocyclyl, aryl or aryl- C_1-C_6 alkyl group;
- 10

- R_2 is an optionally substituted group selected from R' , $-CH_2OR'$ and OR' , wherein R' is as above defined; and the pharmaceutically acceptable salts thereof.
- 15